We claim:

1. An absorbent member exhibiting exceptional expansion properties when wetted, said absorbent member comprising a multitude of randomly oriented chemi-thermo-mechanical cellulosic fibers containing at least about 20% lignin within said cellulosic fibers, said absorbent member having a moisture content of from between about 1% to about 20% water by weight of fiber, a bulk density of from between about 0.5 g/cc to about 1g/cc and a compression factor of at least about 5, said fibers being compacted and bonded by hydrogen bonds and being retained in an elastically stressed condition, said hydrogen bonds being breakable upon contact with aqueous fluid thereby allowing rapid expansion of said absorbent member.

2. The absorbent member of claim 1 wherein said absorbent member has a bulk density of about 0.5 g/cc to about 0.8 g/cc.

3. The absorbent member of claim 1 wherein said absorbent member has a compression factor of at least about 20.

4. The absorbent member of claim 1 wherein said absorbent member has a compression factor of at least about 45.

5. An absorbent member having a high absorbent capacity and exhibiting exceptional expansion properties when wetted by an aqueous fluid, said absorbent member comprising a multitude of randomly oriented chemi-thermo-mechanical cellulosic fibers having an average length of from between about 1 mm to 5 mm, said fibers formed from softwood and containing at least about 20% lignin within said fibers, said absorbent member having a moisture content of from between about 1% to about 20% water by weight of fiber, a bulk density of from between about 0.5 g/cc to about 1g/cc and a compression factor of at least about 5, and said fibers being compacted and bonded by hydrogen bonds and retained in an elastically stressed condition, said hydrogen bonds being breakable upon contact with an aqueous fluid thereby allowing rapid expansion of said absorbent member, and said absorbent member generating at least about 60 psi of dynamic force when contacted with an aqueous fluid.

6. The absorbent member of claim 5 wherein said moisture content ranges from between about 5% to about 15% water by weight of fiber.

7. The absorbent member of claim 5 wherein said cellulosic fibers have an average length of from between about 1 to about 3 millimeters.

8. The absorbent member of claim 5 wherein said cellulosic fibers have an average diameter of from between about 10 to about 40 microns.

9. The absorbent member of claim 5 wherein said absorbent member has a compression factor of at least about 45.

10. An absorbent member having a high absorbent capacity and exhibiting exceptional expansion properties when wetted by an aqueous fluid, said absorbent member comprising a multitude of randomly oriented stiff chemi-thermo-mechanical cellulosic fibers having an average length of from between about 1 mm to about 5 mm, said fibers formed from softwood and containing at least about 20% lignin within said fibers, said absorbent member having a moisture content of from between about 2% to about 15% water by weight of fiber, a bulk density of from between about 0.5 g/cc to about 0.8g/cc and a compression factor of at least about 20, and said fibers being compacted and bonded by hydrogen bonds and retained in an elastically stressed condition, said hydrogen bonds being breakable upon contact with an aqueous fluid thereby allowing rapid expansion of said absorbent member.

11. The absorbent member of claim 10 wherein said chemi-thermo-mechanical softwood fibers are bleached.

12. The absorbent member of claim 10 wherein said absorbent member has a compression factor of at least about 45.

13. The absorbent member of claim 10 wherein at least a portion of the cellulosic fibers have a non-linear configuration.

14. The absorbent member of claim 10 wherein said fibers, when retained in an elastically stressed condition, exhibit recoverable bending, compression and shear forces.

15. An absorbent member having a high absorbent capacity and exhibiting exceptional expansion properties when wetted by an aqueous fluid, said absorbent member

comprising a multitude of randomly oriented cellulosic fibers having an average length of from between about 1 mm to about 5 mm and containing at least about 20% lignin within said cellulosic fibers, said absorbent member having a moisture content of from between about 5% to about 15% water by weight of fiber, a bulk density of from between about 0.5 g/cc to about 0.8 g/cc, and a compression factor of at least about 5, and said fibers being compacted and bonded by hydrogen bonds and retained in an elastically stressed condition, said fibers when retained in an elastically stressed condition exhibiting a releasable dynamic force of at least about 60 psi.

16. The absorbent member of claim 15 wherein said absorbent member has a compression factor of at least about 20.

17. The absorbent member of claim 15 wherein said absorbent member has a compression factor of at least about 45.

18. The absorbent member of claim 15 wherein said cellulosic fibers when retained in an elastically stressed condition exhibit a releasable dynamic force of at least about 90 psi.

19. The absorbent member of claim 15 wherein said cellulosic fibers when retained in an elastically stressed condition exhibit a releasable dynamic force of at least about 130 psi.

20. The absorbent member of claim 15 wherein said absorbent member contains a potential energy that can be recovered according to the formula F=-a/b where: "E" is the potential energy that can be recovered from the absorbent member; and the energy stored per unit volume "y" is according to the formula $y = ae^{bx}$, where "a" is the maximum pressure exerted by the triggered absorbent member upon its contact with an aqueous fluid; "e" is the irrational and transcendental number 2.71828, the base of Napier logarithms; "b" is a constant value ranging between –0.015 and –0.045 which is a function of the maximum pressure and maximum volume change of the absorbent member; and "x" is the change in thickness (volume).